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charcoal and chicken

charcoal and chicken ☆☆☆ great go-togethers

SUMMER'S HERE WITH LOTS of great weather for backyard barbecues, woodsy cook-outs, and beach parties. It's time to give in to that urge to get out of the kitchen and let everyone join in the fun of outdoor cooking.

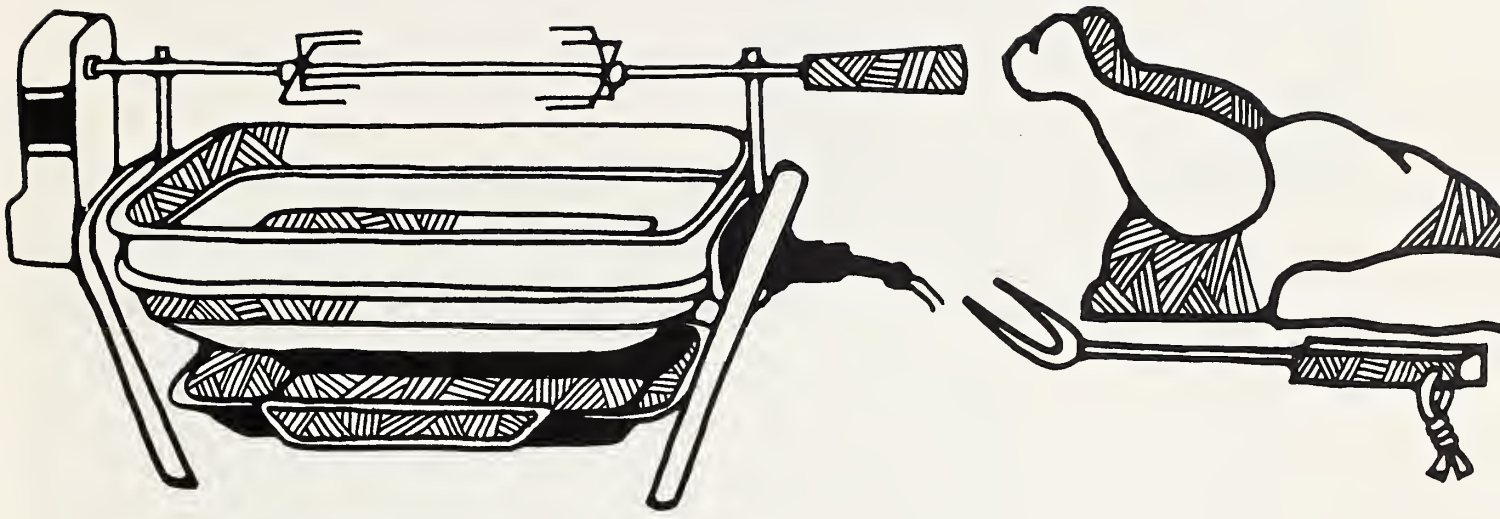
When you're planning the barbecue menu, head the list with poultry. You'll find that nothing tempts hearty appetites like crispy chicken dripping with spicy barbecue sauce or turkey sizzling over the coals.

Chicken is an old favorite for cooking over charcoal, but for a festive touch, why not try turkey or duck? The flavor of charcoal and zesty sauce enhances all three.

Succulent cook-out results begin with high quality, tender birds. When shopping for poultry be sure to look for the USDA grade shield on the label. It means that the poultry has been graded for quality by a trained Federal or Federal-State grader.

U.S. Grade A birds are the highest quality. They're meaty and have good overall appearance, making them your best choice for outdoor broiling.

You'll find the grade shield on packages of poultry parts and on poultry roasts as well as on whole chickens, turkeys, ducks, and other birds.



You may also find the round USDA inspection mark on poultry. All poultry must be inspected for wholesomeness before it is graded for quality.

Check the label again to find the age or class of the bird. This indicates tenderness.

Young birds are more tender than older ones and are best for barbecuing, frying, broiling, and roasting. If the poultry is not young, it will be labeled "stewing chicken," "fowl," "hen," "mature," or "old."

Chicken halves, quarters, or pieces, and small turkey quarter roasts or parts are good for outdoor barbecues. You can buy them either cut up or as young fryer-roaster turkeys or broiler-fryer chickens that can be cut into individual servings for the grill.

For rotisserie cooking, buy whole chickens, turkeys, ducks, large poultry pieces, or poultry roasts or rolls.

Careful selection of poultry is important, but proper cooking is necessary for good eating. Practical planning and patience pay off in tender, juicy rewards and praise for the chef.

The delicious charcoal taste of outdoor cookery is produced by fats and juices dripping onto the hot fire, causing it to flare up and char the meat. But don't make the mistake of letting flames get out of hand. That won't enhance flavor, but will be a hazard.

The key to a successful barbecue is starting with a solid bed of glowing coals—without flames. Light the fire at least 30 minutes ahead of time so it can burn down to ash-gray coals before you start cooking.

On most grills you can adjust the cooking rack or grid to control heat. On nonadjustable grills or with outdoor fires, you can reduce heat by spreading the coals or by occasionally sprinkling them with water.

When the fire is ready, brush poultry with melted butter, margarine, or your favorite barbecue sauce. The center of the rack is hotter than the outside, so place small pieces like chicken legs, wings, and thighs near the edges to avoid over-browning.

Cooking time ranges from 1 to 1½ hours depending on the size and thickness of the pieces. Turn and baste occasionally to assure even cooking.

An excellent way to cook whole chickens, turkeys, ducks, and poultry roasts is on a rotisserie that turns the meat slowly over the fire.

There is a certain knack to operating a rotisserie. Mount and balance the whole bird, roast, or large pieces before starting the rotary spit. Be sure that the poultry does not slip as the spit turns, or you may have to salvage your dinner from the coals.

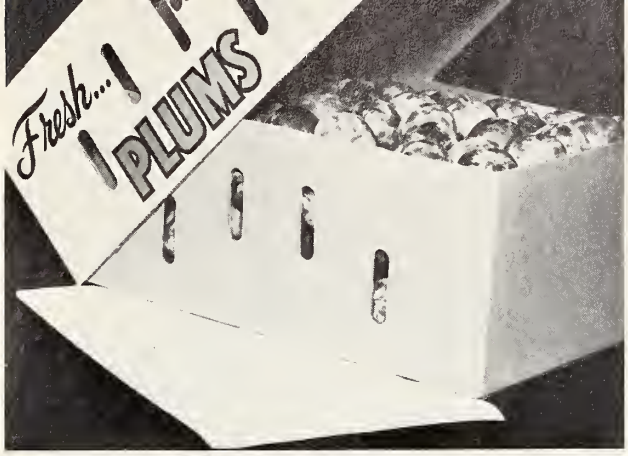
To mount a whole bird, attach the neck skin with a skewer to the back of the body. Insert the spit through the length of the bird from tail end to front and tighten the holding prongs. Then tie the tail and drumsticks firmly to the rod. When properly balanced, the bird rotates evenly as the spit turns.

One question you're certain to hear is, "when's it going to be done?" Cooking time varies with the size of the bird, closeness to the heat, and temperature of the fire. A rule of thumb is to allow about 20-30 minutes per pound, but since rotisseries vary considerably, be sure to follow the manufacturer's directions.

To test for doneness, protect your fingers with a paper towel and grasp the end of the drumstick. When the leg moves easily, the bird is done.

The zesty aroma of charcoal mingling with the poultry is sure to tantalize the appetites of young and old alike. And they won't be disappointed when they sample the savory goodness of barbecued poultry. Be ready to serve seconds and even thirds.

After you've tried it, poultry is bound to become one of your barbecue favorites. So don't wait for a special occasion to cook-out—a barbecue itself is reason enough to celebrate and have fun. □



Packaging For More Perfect PLUMS

By Norman C. Healy

Do you realize that the appearance and wholesomeness of the fruit you buy depends greatly on how it is packed and the container it's packed in?

Most bruising takes place when fruit is packed or is in transit to market. Even superficial bruises, such as vibration bruising (caused by fruit rubbing against an adjacent surface) make fruit less desirable to consumers and more difficult to market.

A new method of packing fruit was needed to make it less susceptible to damage while in transit. To satisfy this need, the "tight-fill" method of packing by vibration was developed by the Extension Service of the University of California at Davis, Calif., during the 1960's. The plum industry, in particular, has enthusiastically adopted tight-fill packing.

As a result of the increasing number of California plums packed and labeled as tight-filled, it became desirable to establish uniform standards for the methods of packing and the containers used.

Under a Federal marketing order covering California-grown plums, USDA's Consumer and Marketing Service requires containers of plums to meet specified standards if they bear a tight-fill label.

The tight-fill method consists of filling a container in a random manner with pre-sized fruit. The fruit is then settled by carefully controlled vibration, which causes the fruit to move into the voids left during filling. Vibration accomplishes the settling which may otherwise occur during transit.

In the final step, the container lid is tightly fastened so that the top padding is compressed upon the fruit. Envelope-type pads, which are filled approximately a half inch with either redwood bark or excelsior, work best because they have the ability to swell under high humidity conditions. This offsets the swelling of the container. None of these procedures will damage the fruit when done properly.

As a result of this packing method, individual fruits are held firmly in place during transit. This lack of movement prohibits vibration bruising. The average injury of tight-filled plums is less than one-half that found under standard packing methods.

One primary advantage of this method is the reduction of labor costs to packing firms. Tight-fill packing allows much more mechanization.

Another advantage is that it results in a highly uniform pack, while the uniformity of a hand-packed container varies with the skill of the individual packer.

The receiver of the fruit also acquires certain benefits. Since most fruit is sold in either a consumer package or a bulk display, it has to be removed from the shipping container prior to sale.

The lack of wraps, cups, trays, baskets, or dividers in the tight-fill container greatly facilitates rehandling the fruit.

Much of the success of the tight-fill method depends on the container that the fruit is shipped in—usually corrugated paper. Requirements for the container vary depending on whether it's to be used for immediate shipment or long-term storage.

The container and its lid must both be capable of maintaining pressure on the pack during storage and transit. A sturdy lid is necessary for stacking strength. A sturdy container will help reduce bulging.

So that plums will settle uniformly, the containers should be three or four times as deep as individual fruits are wide. For small plums this depth can be as shallow as 6 to 9 inches. Containers which are about half as long as they are wide can be stacked and loaded better than square containers.

In commercial packing plants the tight-fill method of packing has been steadily winning acceptance. The attractive appearance of tight-fill packed fruit, plus the ease of handling, is helping to speed approval of this method.

The net result is quality fruit for the consumer, and reduced losses from bruising for the packer and retailer. So, everyone benefits. □

The author is Chief, Fruit Branch, Fruit and Vegetable Division, C&MS, USDA.

THE CORN BLIGHT disease—along with drought in some areas—cut last year's U.S. corn harvest by 10 percent. No one can predict how severely the blight will affect this year's crop. The blight, which has been occurring in the Southern States for a number of years, has moved into the Corn Belt States due to a new race of the fungus. It is spread by spores of the fungus which are carried by wind or rain from field to field.

The infection usually begins on the lower leaves and spreads to the upper leaves. In 2 weeks or less, the fungus can penetrate a husk.

Infection may cause husks to become sealed to the grain, thus making husking, shelling and separating much harder. Black spores often occur on the kernels and cob.

Seed specialists in USDA's Consumer and Marketing Service are aiding farmers and seed companies by testing seed to determine whether it is infected with the blight. They are also checking to ensure that the percentages of resistant and non-resistant seed shown on labels of seed blends are correct. □

WORKING TO BEAT THE BLIGHT

The black infected area on this ear of corn (upper left) reveals the damage done by the corn blight fungus. This seedling's root (upper right) is being examined by a seed specialist to determine if its growth is normal. Stunted roots indicate a strain of seed which is susceptible to the blight. Seeds are being examined (right) to determine if they have become infected with the corn blight fungus and have turned black.

Strawberries Fly to Market

By A. M. McDowell

THANKS TO MODERN transportation and production and marketing practices, we can enjoy fresh strawberries almost all year 'round.

Our major supplies of strawberries come from California. Jet freighters provide the vital link between growing areas and markets in the East, Hawaii, and Europe.

During the peak of the California harvest season, from April to July, jet freighters leave Los Angeles and San Francisco daily with their precious cargoes of fresh strawberries and other perishable commodities. Two-thirds of the Nation's fresh strawberries are marketed from California.

California has become the dominant strawberry producing State because of the new varieties adapted to its conditions and the improved cultural methods developed since the late forties. Very heavy yields of medium to large attractive berries are obtained over a long harvesting period.

California strawberries have moved to market by air for some 20 years, but only in recent years has the volume been significant. For example, last year some 2,100 "carlots" (equivalent to a railroad car of 1400 trays of 12 pints each) were shipped by air.

To keep growers, shippers, wholesalers, retailers, and others abreast of daily trends and prices, the Fruit and Vegetable Division of USDA's Consumer and Marketing Service issues special market news reports on strawberries. The reports are produced by the Federal-State Market News Service, a joint service of C&MS and State departments of agriculture.

The San Francisco office of the Federal-State Fruit and Vegetable Market News Service, operated by C&MS' Fruit and Vegetable Division in cooperation with the California Department of Agriculture, has distributed special reports since 1951.

Seasonal shipping point market news reports are issued from many fruit and vegetable production areas during the harvesting season. For California strawberries, the season is about 10 months, from February to November. In addition, daily fruit and vegetable market news reports issued at terminal market offices and competitive production areas in other parts of the country carry summaries of prices, volume, and the movement of strawberries by truck, rail, and air.

In the 1950's and up to about the mid-sixties, most strawberry shipments to distant markets were made by carlot express. Express railroad cars attached to passenger trains reached Eastern and Midwestern destinations 2 or 3 days earlier than by regular freight.

As the number of passenger trains declined during the latter part of the 1960's, this service became less satisfactory and shippers switched rapidly to air freight. As a result, carlot express service came to an end after the 1968 season.

Jet freighters, especially the new jumbo models, provide greater speed and capacity. Special ground facilities make it possible to load and unload cargo quickly and easily.

Speed of delivery is the major advantage offered by air freight deliveries. The high perishability of strawberries and their relatively high market value make them a prime candidate for air shipments.

Almost all of the volume of California strawberries moves by air to the more distant markets in the East and Midwest. Truck transportation handles that portion of the crop being shipped to markets in the West.

Shipping strawberries by air is not quite as easy as it may sound. Large freighter planes require long runways and expensive ground equipment. They are scheduled almost entirely between major cities. As a result, strawberries sometimes must be trucked as far as 260 miles from growing area to airport.

At the destination airport, the berries may begin still another long journey—being trucked as far as 100 miles to be sold. Weather conditions add to the difficulty of transportation, too.

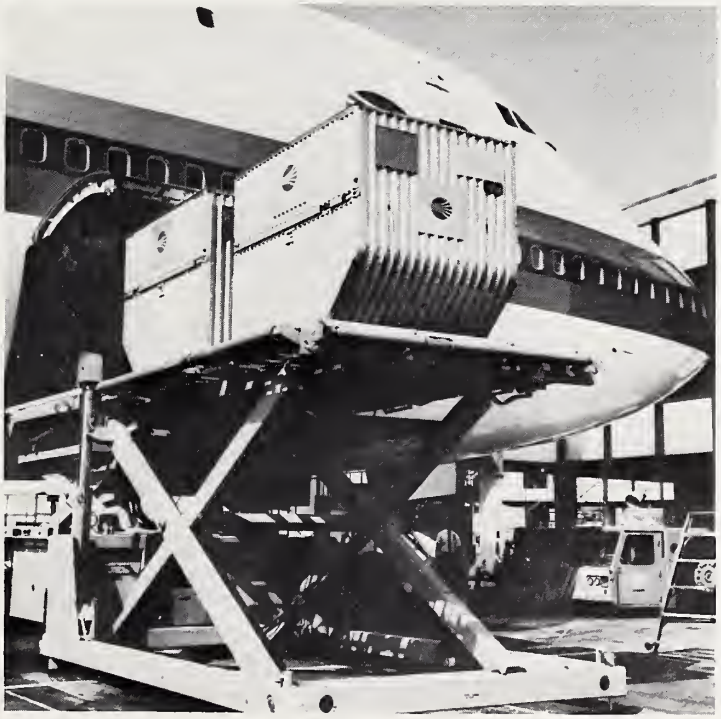
Sometimes, jet freighters with their precious loads of perishable strawberries are diverted to alternate airports. Then other shipping plans must be quickly implemented.

Scheduling is another problem. Since most strawberries are sold on weekends, the fruit is shipped during the middle of the week. With only a certain amount of cargo space available and many customers to serve, airlines sometimes have to refuse shipments. Precise scheduling, therefore, is paramount.

Despite all of these problems, some 37 million pounds of California strawberries were shipped by air last year. Additional shipments of strawberries were made by air from other production areas, but were significantly less.

So the next time you sit down to a serving of strawberry shortcake or pie, or munch on some fresh strawberries, remember that they probably had an interesting journey to your dinner table! □

The author is Officer-in-Charge, San Francisco Office, Fruit and Vegetable Market News, Fruit and Vegetable Division, C&MS, USDA.



Strawberries (far left) are usually picked into trays holding 12 pints each, and the trays are stacked on pallets for efficient handling all through their journey to market. The pallet loads of strawberries (middle two pictures) are usually taken to a cooling plant and then may be sealed in special polyethylene bags to help keep their temperature down. The pallets are then placed either directly onto jet freighters or into special shipping containers (immediate left) before being loaded aboard.

COLD FACTS ABOUT FREEZING MEAT

QUESTION. Buying meat in quantity:

a. is always a money-saver.
b. is never a money-saver.
c. can be a money-saver.

ANSWER. c. Whether or not you save money by buying meat in quantity depends upon many factors. An important one is your basic knowledge about grades and percentage yields of different cuts.

Did you check "c"? Good. This probably means that you know how complicated meat buying can be.

However, you'll enjoy sharpening your knowledge with this quiz, adapted from the book, "How to Buy Meat for Your Freezer," published by USDA's Consumer and Marketing Service.

Check "a" or "b"? Then you'd really better take this quiz—quick!

1 To buy meat for the freezer means to buy:

a. by the carcass only (whole carcass, side, or quarter).
b. wholesale cuts only (loin, round, chuck, etc.).
c. retail cuts only.
d. any of these.

2 You are thinking of buying a 300-pound side of beef. From that side you can expect about:

a. 150 pounds of usable meat cuts.
b. 300 pounds of usable meat cuts.
c. 225 pounds of usable meat cuts.
d. none of these.

3 This stamp on the meat you're buying means that it was federally inspected for:

a. fat content.
b. wholesomeness.
c. quality.

4 This shield-shaped USDA grade mark 

assures:

a. quality.
b. wholesomeness.
c. quality and wholesomeness.

5 The two USDA meat grades most often found on retail cuts are:

a. USDA Good and USDA Utility.
b. USDA Prime and USDA Good.
c. USDA Prime and USDA Choice.

6 Terms such as "Fancy," "Supreme," "steak package," and "beef bundle" are examples of:

a. usually good buys, high-quality meat available at bargain prices.
b. likely sounding "grade" names for non-federally graded meat and advertised "deals" that should signal the consumer to beware.

7 You have a large family and want the greatest amount of usable meat for the least money. If you were buying a quarter of beef, your best buy would probably be:

a. a forequarter.
b. a hindquarter.

8 The yield grade, which is different from the quality grade, measures:

a. only the amount of fat on a carcass.
b. the amount of usable meat available from a carcass.
c. the amount of bone in a carcass.

9 You can expect about a 72 percent yield of retail cuts from a Yield Grade _____ beef carcass.

a. 1.
b. 3.
c. 5.

10 Grades for pork are primarily measures of yield, rather than quality.

a. True.
b. False.

11 Since lamb is produced from _____ animals, most cuts can be cooked with _____.

a. old - moist heat.
b. young - dry heat (oven roasted or broiled).
c. old - dry heat.

12 At 0° F., properly wrapped beef and lamb steaks and roasts can be stored for _____ with little or no quality loss.

a. 1–3 months.
b. 3–4 months.
c. 4–8 months.
d. 8–12 months.

Answers:

1 (d) Any of these. The choice is yours, based on such factors as the amount of freezer space available and amount of money you wish to spend at one time.

2 (c) 225 pounds. A 25 percent "cutting loss" is about average. A good rule of thumb for carcass beef is: 25 percent steaks, 25 percent roasts, 25 percent ground beef and stew meat, and 25 percent fat and bone.

3 (b) Wholesomeness. The phrasing in this round purple stamp means "Inspected and Passed." It is assurance that the meat has been checked by USDA inspectors and found to be safe for use as food.

4 (a) Quality, strictly speaking. But you're also right if you checked (c) quality and wholesomeness, because meat must first pass inspection for wholesomeness before it can be USDA graded.

5 (c) USDA Prime and Choice. These are the top two USDA grades for quality. A very high percentage of the beef and lamb that qualifies as USDA Prime and Choice is federally graded. Also, Choice grade beef is produced in a much greater volume than any other grade. Good grade beef is also available; Standard and Commercial grades are less readily available.

Prime and Choice grade meat is usually more tender, juicy, and flavorful than that in lower grades. When buying in quantity, consumers are well advised to buy only meat of the higher quality grades.

6 (b) Likely sounding "grade" names and signals to beware. Federally graded meat carries the term "USDA" along with the actual grade, such as "USDA Choice," within the shield-shaped grade mark that is stamped on the carcass.

The official USDA grade names, such as Prime, Choice, and Good, are based on nationally available standards of quality that are applied uniformly at all times. This may or may not be the case with meat labeled with other terms, such as "Fancy."

Also, beware of "deals" like a "steak package" because often the dealer alone knows which cuts are included.

7 (a) A forequarter. The total yield of meat from a forequarter is greater than that of the hindquarter and it usually costs 15–20 cents less per pound.

Except for the delicious rib roast, though, the forequarter contains mostly the less tender cuts such as chuck roasts, short ribs, brisket and other meat best suited for grinding and stewing.

Hindquarters produce most of the more tender steaks and roasts.

According to the booklet, "How to Buy Meat for Your Freezer," the forequarter from a 300-pound side of beef yields about 118 pounds of usable cuts (76%) and the hindquarter about 100 pounds (70%).

8 (b) Yield grades reflect, primarily, differences in the amount of fat that is trimmed off in making retail cuts. Because of this, yield grades are not important if you buy retail cuts.

If you buy wholesale cuts, or quarters or sides, though, the yield grade can be very important. For example, a 300-pound side of Yield Grade 2 beef is worth about $12.00 more—four cents per pound—than a 300-pound Yield Grade 3 side.

There are five yield grades, with Yield Grade 1 indicating the highest yield and Yield Grade 5 the lowest.

9 (b) 3. The expected yield of retail cuts from a Yield Grade 3 beef carcass is 70.5 to 75.1 percent.

10 (a) True. The USDA grades for pork carcasses recognize only two quality levels—acceptable (meaning good quality lean meat) and unacceptable. The grades of acceptable pork range from U.S. No. 1 to U.S. No. 4 and reflect differences in the yield of the four major lean cuts as a percentage of the carcass weight.

There is very little Federal grading of pork—and no federally graded pork is available in retail stores.

11 (b) Lamb is produced from animals less than a year old. Therefore, most cuts of USDA Prime or Choice lamb are tender and can be oven roasted or broiled.

12 (d) Beef and lamb roasts, steaks, and chops, can be kept safely frozen for 8–12 months; fresh pork for 4–8 months; ground beef and lamb for 3–4 months; and pork sausage for 1–3 months.

Score yourself two points for each correct answer.

20–24 Excellent. You are an aware, skilled buyer of quantity meat.

16–20 Very Good. You are quite adept at purchasing meat, but you might brush up on the fine points. Why not let the C&MS booklet, "How to Buy Meat for Your Freezer," help you.

8–16 Only Fair. You need help to get the most in quality and economy for your money.

Below 8. QUICK! Get that booklet, "How to Buy Meat for Your Freezer." *WRITE:* Office of Information, U.S. Department of Agriculture, Washington, D.C. 20250. Please use your ZIP code. □

INTRODUCING... THE FROZEN DESSERT FAMILY

WHETHER YOUR FAVORITE is vanilla or tutti-frutti, you probably share an enthusiasm for frozen desserts common to millions of Americans. In fact, so popular are ice cream and other frozen desserts that Americans consumed an average of over 21 quarts *apiece* in 1969.

The members of the frozen dessert family show up at amusement parks, on summer nights, at drive-in movies and birthday parties, and on restaurant menus everywhere. Members of the family come on sticks, in cups and cones, in pints, quarts, and half gallons, and in all sorts of tempting combinations with other confections.

Although vanilla is still the favorite, frozen desserts come in hundreds of flavor combinations ranging from pumpkin and pistachio to innumerable variations of chocolate.

Since frozen desserts are consumed in such quantity, it's reassuring to know that USDA has recommended standards of quality for their manufacture.

The standards, which may be adopted voluntarily by any State, were formulated in 1967 with the cooperation of industry.

They recommend minimum *quality* requirements for the finished product as well as for the dairy ingredients. The standards offer criteria for plant sanitation as well.

In addition to the USDA quality standards, the Food and Drug Administration has also issued standards—standards of identity which prescribe minimum *composition* requirements for the finished product when the product will be shipped in interstate commerce. Many States have adopted FDA's standards as their own, but each State may formulate additional standards for frozen desserts made and sold within its boundaries.

Getting to Know Them

As a buyer of frozen desserts, you'll find it helpful to get to know them well.

There are three primary members of the family: ice cream, ice milk, and sherbet. These products differ in, among other things, the percentage of milkfat they contain. A higher percentage makes a frozen dessert smoother and richer.

The products also have differing amounts of total milk solids, which are used to improve texture and give "whippability" to frozen desserts. Milk solids are found in the nonfat part of milk, and consist of milk sugar (lactose), milk proteins, and mineral solids.

Each of these frozen desserts also has a stabilizer added to keep it from separating.

Ice cream—which accounted for more than 15 of the 21 quarts of frozen desserts each of us consumed in 1969—is made from cream, milk, sugar, and stabilizers. By FDA standards of composition, it must contain at least 10% milkfat, and 20% total milk solids.

Frozen custard (also called French ice cream or New York ice cream) is the same as ice cream with the addition of egg yolks.

You may have noticed that one brand of ice cream costs more than another. More expensive ice cream will probably have a higher milkfat content which will make it extra rich and smooth. It also may have a lower "overrun." Overrun is the amount of air whipped into ice cream during its manufacture.

Ice milk accounted for over five of the 21 quarts of frozen desserts each of us consumed in 1969. It's made from milk, stabilizers, and sweeteners, and must contain between 2 and 7 percent milkfat and at least 11 percent milk solids.

The soft-serve frozen dessert you buy at the roadside stand is the same as the ice milk you buy in the store except that it's specially processed so that it can be served soft.

Both ice cream and ice milk may be bought artificially sweetened for sugar-restricted diets. The requirements for these are the same as for the regular products, except that no sugar or corn sweeteners can be used. These are replaced by artificial sweeteners, which must be clearly marked on the carton.

The quart of fruit sherbet consumed by each American in 1969 was made from milk, fruit or fruit juice, stabilizers, and sweeteners. Sherbet is characterized by a high level of sugar —about twice as much as ice cream. FDA composition standards require from 1 to 2 percent milkfat and 2 to 5 percent total milk solids.

You may find cousins to these frozen dessert products on your grocer's shelf.

Mellorine, or "imitation ice cream," is a product like ice cream except that the milkfat has been replaced by another animal fat or suitable vegetable fat such as soybean or cottonseed oil. Mellorine presently can be legally made and sold in only about a dozen States, located primarily in the South and West.

Water ice, another cousin, contains no milk solids. Other than that, the standards are the same as for sherbet.

Whichever is your frozen dessert preference, here are a few tips to make sure your choice keeps its good quality.

Keep frozen desserts in a tightly closed carton. Store at 0°F., or lower, if possible. If you store ice cream in your refrigerator's frozen food compartment, use it within a week—if it lasts that long!

Frozen desserts are easier to scoop or slice if they are transferred from the frozen food compartment to the refrigerator section a short time before serving—about ten minutes for a pint and 20 minutes for a half gallon.

If you watch your family's calories you may want to keep the following facts in mind. One half cup—about a scoop—of ice cream has 128 calories.

The same amount of sherbet has 130 calories, and ice milk has 100.

This is considerably less than a piece of apple pie (⅐th of a nine-inch pie) which has 330 calories, or a 2-inch piece of chocolate cake with fudge icing with 420 calories. For the fearless—and fortunate—diner, combinations of the latter two with ice cream are excellent.

Keep in mind that frozen desserts are by no means empty calories. Not only do they rate with the tastiest of desserts, but they're made from one of nature's most nutritious foodstuffs—milk. Ice cream, for example, is composed of 80–85% milk . . . and what tastier way to serve milk?

Noble Ancestry

Frozen desserts trace their ancestry to the time of Charles I of England over 300 years ago. The king's French chef came up with "frozen milk" that so pleased the king that he pensioned his chef with 500 pounds a year and swore him to secrecy about the recipe.

Forerunners of frozen desserts graced the table of Louis XIV, where they were described as "delicious sweetmeat, cold, and compact as marble."

They earned mention in a letter from Beethoven in which he fretted to a friend that "the Viennese are afraid that it soon will be impossible to have any ice creams, for as winter is mild, ice is rare."

And they made the society pages in an account of a White House reception when Dolly Madison was the First Lady: "When the brilliant assemblage —America's best—entered the dining room, they beheld a table set with French china and English silver, laden with good things to eat, and in the center, high on a silver platter, a large shining dome of pink ice cream."

Frozen desserts have come a long way since the days when they were a delicacy reserved for the elite. They're an everyday dessert today—better than ever before. □

Consumers--do you know?

PREPACKAGED "BARBECUED meats" that carry the mark of Federal inspection must comply with specific requirements. The meat must have a barbecued (crusted) appearance and be prepared over burning or smoldering hardwood or its sawdust. And the weight of the finished, barbecued meat can't exceed 70 percent of the weight of the fresh, uncooked meat.

These requirements are all part of USDA's efforts, through inspection, to help assure consumers that the product inside the package is what the label says it is.

For more on the inspection, buying and care of meat and poultry products, ask for the free "Meat and Poultry Leaflets G-170 through 174." *Write*: Office of Information, U.S. Department of Agriculture, Washington, D. C. 20250. □

THAT STEAK is sizzling beautifully . . . . smells scrumptious . . . . but you want to test its doneness. Cut into steak or other small cuts of meat along the bone or in the center and check interior color. Rare meat will be somewhat pink.

But if it's pork or poultry you're testing, make sure the juice isn't pink. These meats should be cooked all the way through for safe eating, according to USDA poultry and meat inspectors. □

PLENTIFUL FOODS FOR JULY

TURKEY IS THE FEATURE of USDA's Plentiful Foods List for July.

Other July plentifuls are eggs, fresh plums, fresh vegetables (tomatoes, cucumbers, sweet corn, cabbage, celery, and carrots), watermelons, rice, frozen and fresh salmon, and cranberry sauce and juice.

Most foods listed lend themselves well to summer menus and outdoor cooking. "Turkey in July" will be a familiar theme with many backyard chefs. Ample supplies of cranberry sauce and juice will be available as traditional side dishes.

Summer fruits and vegetables will be at the peak of quality and watermelons served as dessert will please young and old alike. Fish lovers will be delighted to know that frozen and fresh salmon stocks will be abundant in July.

C&MS Trains Puerto Rico's Meat Plant Managers

THE CENTURIES-OLD heritage of Puerto Rico has intrigued world travelers for decades. And while this antique charm has been a boon to the economy of the tourist industry, it may have helped create the opposite effect on other businesses.

The meat packing industry is a prime example. Modern methods of slaughtering and processing meat products were practically unknown in Puerto Rico until recent years.

Thus, when Congress passed the Wholesome Meat Act in 1967, Puerto Rico found it had a long way to go to meet the minumum standards required by the Act for an effective government meat inspection program.

It was no surprise, therefore, when Puerto Rico was designated for full Federal inspection—since it did not reach "equal to" status by the December 15, 1970, deadline set by the Act.

In spite of this, the Puerto Rico Department of Agriculture has been taking a series of steps to improve its meat inspection service. It is building five regional slaughterhouses to meet the needs of Puerto Rico's citizens.

Unlike most slaughtering plants in the continental United States, which are owned and operated by private enterprise, these five new plants will be owned and run by the Commonwealth of Puerto Rico, or municipal governments.

Officials of USDA's Consumer and Marketing Service have been working closely with the Puerto Rico Department of Agriculture. When the slaughterhouses are completed, they will meet all the structural requirements set up under the Wholesome Meat Act.

In this way, adequate sanitation can be maintained with the least amount of difficulty. The lack of adequate sanitation was the main problem with many of Puerto Rico's existing plants.

Another step that the Puerto Rico Department of Agriculture has taken to improve its meat inspection program was the selection and training this spring of managers for each of the regional plants.

Since there were no meat slaughtering plants under Federal inspection in Puerto Rico at that time, these men were sent to the States to get their training under the supervision of C&MS inspection trainers.

Most of this training took place at meat establishments in Mississippi, and was handled out of the regional C&MS Meat and Poultry Inspection office at Atlanta, Ga.

According to Dr. N.B. Isom, Acting Southeast MPIP Regional Director, the training was carefully geared to give these men direct exposure to operational conditions which they most likely would encounter later on in Puerto Rico. This included sanitation and plant maintenance, construction of equipment, and meat processing techniques.

The training, which lasted three weeks, included intensive reviews of blueprints, facilities, equipment, microbiology, food handling and personal hygiene, sanitary dressing, post-mortem and ante-mortem inspection, and compliance cooperation with local authorities.

In addition, the men had the opportunity to talk with individuals at various Mississippi meat plants about operation procedures and problems, personnel administration, and inspector-packer relationships.

This special training program is but a part of a far broader endeavor by C&MS to help all States that want it provide better training for their inspection personnel.

For Puerto Rico, as for the States, this type of training is a key ingredient in the efforts being made to establish a uniform Federal-State inspection network throughout the U.S. and Puerto Rico.

Without such training, inspectors would be hard-pressed to be able to ensure consumers of a wholesome supply of meat—whether on the island or the mainland.

As one of the Puerto Rican managers-to-be said, "We have had the opportunity to learn what techniques are necessary to obtain a meat product that is truly fresh and wholesome. For Puerto Rico, this is good." □

The New Look in Beef

By John C. Pierce

CONSUMERS ARE developing a diet sophistication unparallelled in history. Their aversion to excess fat in meat is becoming a clarion call to producers for meatier, more muscular cattle that produce less excess fat—but *without a reduction in eating quality* of beef.

The rise in consumerism has had an interesting parallel in the livestock industry—the amazing growth in the demand for red meat, particularly beef.

Per capita beef consumption rose from 81 pounds in 1959 to 113 pounds in 1970. High-quality "fed" beef (the finished product of the feedlot) now makes up 75 percent of our total beef production.

This unprecedented demand for beef is due to several factors: increasing population; rising consumer incomes; but, most importantly, it's due to consumers' preference for the higher quality beef now being produced in such large volume.

Today's consumer likes the tenderness, juiciness, and flavor of today's beef. Her preference—price considered—has made USDA Choice by far the most popular quality grade. Certainly the success story of the demand for beef is linked to the increased production of Choice and Prime grade beef, which now exceeds 55 percent of the total beef produced.

But the consumer is somewhat less pleased when she pays for excess fat that she must trim off a cut before serving.

Her call for better trimmed, less wasty beef grew stronger through the 60's. It led to increased demands by retailers for carcasses with high yields of salable beef, but with no decrease in eating quality. This trend probably will continue as the consumer signal for the 70's.

We in the Livestock Division of USDA's Consumer and Marketing Service became attuned to these changes back in the 1950's. It was evident that a new dimension would soon be needed for use in marketing beef and cattle to reflect differences in their yields of closely trimmed retail cuts. We adopted a new word—"cutability"—to describe what is now a widely used concept of livestock marketing.

The yield of salable meat that a carcass will produce depends on two major factors: the thickness of muscling, and the amount of trimmable fat.

Several years of research, study, and observation established conclusively that wide differences in cutability—and value—were present among cattle and beef of the same quality grade.

This also showed that a system of USDA yield grades for beef would be practical. The concept was demonstrated and discussed with industry, and yield grades for beef and cattle were adopted in 1965.

Yield grades are indicated by numbers from 1 to 5 (high to low cutability). Their use, like that of the quality grades, is optional, and they may be used either with or without the quality grades.

Much has happened in these last 5 years. Producers are striving to turn out high-quality, "meat type" animals that suit the public taste, and also to realize some financial rewards for their efforts. And the value of yield grades is increasing along with this concern for meatier cattle.

In 1966, the first full year that yield grades were available, well under a half billion pounds of beef were yield graded, or less than 4 percent of the beef that was quality graded.

In 1970, 3.5 billion pounds of beef were yield graded. This is a little more than 25 percent of the amount quality graded. (USDA officially grades about two-thirds of the total commercial beef production and over 85 percent of the fresh beef sold as retail cuts).

These 3.5 billion pounds (a very substantial level of use for so short a time) tell us that the yield grade con-

cept is catching on. It is helping the producer—the basic architect of the livestock business—and the feeder to get a more equitable price for their high cutability cattle.

The present use of yield grades also holds out hope that the market may soon more nearly reflect the full value differences associated with differences in cutability.

Today, Choice, Yield Grade 2 beef carcasses may bring $0.50 to $1.50 more per hundredweight than Yield Grade 3 carcasses. Yet according to Livestock Division data, a full yield grade difference at today's prices results in more than a $4 per cwt. difference in the retail sales value of Choice beef carcasses.

I believe that the increased precision which I expect to occur in the production and marketing systems in the 70's will bring about more realistic price differentials than now exist for the different kinds of cattle being produced.

Several trends now gathering momentum indicate that cutability will receive even greater attention in the molding of the beef supply in the next 10 years.

The widespread interest in new breeds of very muscular European cattle and in the identification of meatier cattle within long-established beef breeds represents an effort in this direction.

Among purebred breeders, progeny testing and carcass evaluation programs emphasizing cutability are receiving greater emphasis. And judges at livestock shows have become very adept at recognizing and selecting highly muscular cattle.

In this connection, history shows that the pendulum often swings too far as changes occur. In the search for meatier cattle, producers need to also maintain their emphasis on the basic quality factors that have made beef so popular with consumers! We can select, feed, and manage cattle for both high cutability and high-quality beef.

The trend toward more of the large commercial type of feedlot—and the attendant better control of cutability—appears inevitable.

In the meat industry, the spotlight is on the fabrication of carcasses into trimmed block-ready cuts at the packing plants and at retailers' warehouses.

There are indications that these operations may someday include the prepackaging of retail cuts. As these operations develop, they will afford excellent opportunities to get precise, firsthand information on value differences associated with different yield grades.

This should lead to greater use of yield grades, wider price differentials between yield grades, and greater production of high cutability cattle.

Automation and computers will play an increasingly important role in all of these changes. And all will be needed if the future demand for beef is to be met.

That demand will be overwhelming. The projected population for 1980 is 230 million. And per capita beef consumption is expected to jump to 130 pounds.

To keep pace with this predicted demand, total beef production will need to reach about 30 billion pounds by 1980—an increase of more than one-third over the peak production of 1970.

The beef business is a dynamic industry. It can be counted on to meet tomorrow's toughest challenge—an increased supply of beef with the "new look!" □

The author is Director, Livestock Division, C&MS, USDA.

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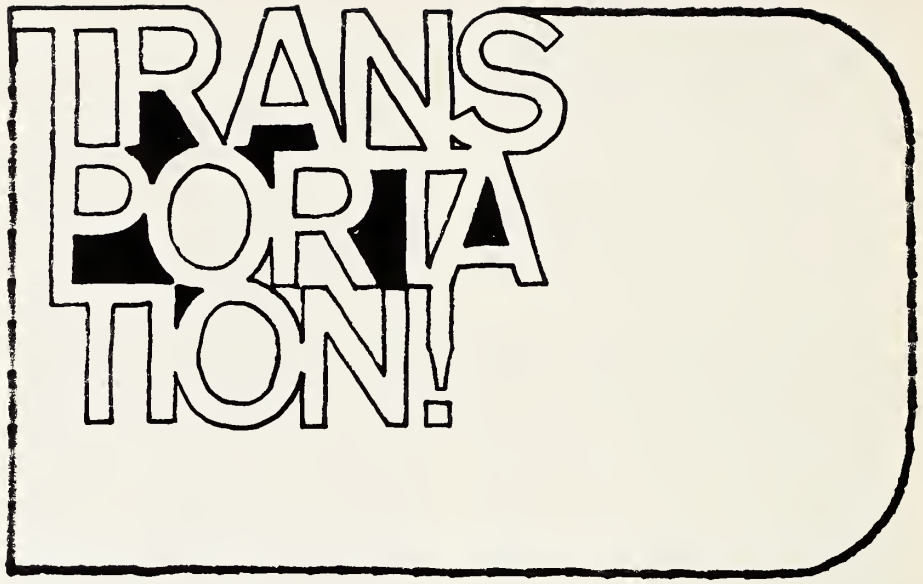
C&MS SERVES SHIPPERS

By Paul Mills



FEW FACTORS ARE more important to farmers—and consumers—than efficient transportation services.

The farmer depends on swift, safe carriage of his commodities to the marketplace. The consumer depends on the same services for his supply of food and fiber.

Both farmers and consumers alike have a keen interest in the cost of these services. Higher rail rates, for example, mean higher costs for getting the foods to the marketplace.

Either the farmer will absorb these costs and, as a result, get less for his crops, or the consumers will pay the cost through higher prices. Perhaps both will happen.

Congress has given USDA responsibility for helping farmers acquire from carriers the best possible rates and services. This responsibility is in turn delegated to the Transportation and Warehouse Division in USDA's Consumer and Marketing Service.

Transportation specialists and economists in the Transportation and Warehouse Division work closely with farm organizations, consumers, other Federal agencies and State departments of agriculture to help improve the Nation's transportation network.

Unfortunately, agricultural interests do not always raise their voices when carriers propose changes in their services and rates. Yet, the rate-making structure in the transportation industry provides for affected parties, such as farmers, to make their views known.

A recent transportation orientation seminar conducted by C&MS brought together officials from several States for a week-long study of the Nation's transportation system. The workshop concentrated on the possible role States and others interested can play in responding to proposed changes by the carriers or in petitioning the carriers to make changes.

Contrary to common belief, the Interstate Commerce Commission does not set freight rates or even approve all of them.

Rather, rates are formulated by the railroads or motor carriers either individually or through their regional freight associations or bureaus. A change in rates may be proposed by either the carrier members of the bureau or by those served, such as farmers.

After the proposal is published by the bureau, it is subject to comments, either in writing or at a public hearing. If the bureau approves the rate change, it is published in tariff form and filed with the ICC to become effective in 30 days. Interested parties may file protests seeking to block the rate change.

Protests are not always filed, and each year thousands of tariff changes go into effect without consideration by the ICC.

Obviously, this system places a heavy burden on local and regional interests to respond to new proposals. Yet these interests—for example, the farmers who may have to pay more for grain shipments—may be unaware of their right to be heard.

The officials attending the workshop were advised that negotiating with the carriers is usually the quickest and most productive method of obtaining rate changes.

State officials, who see to the interests of their constituents, must be especially aware of their possible role in rate-making. To this end, the recent orientation seminar included sessions with various commodity specialists and economists who analyzed rate structures and trends.

The State officials were briefed on how to prepare exhibits and testimony to support positions for or against rate or service changes. They were also shown the methods used by USDA commodity specialists to measure the economic impact of rate or service adjustments on agricultural producers.

If all the officials' problems were not solved, at least they learned where to turn for help. Farmers and other shippers will, of course, benefit most directly from a transportation system which is reasonably priced and efficient. But consumers also benefit when their interests are adequately represented in the rate-making process. □

The author is Chief, Transportation Services Branch, Transportation and Warehouse Division, C&MS, USDA.

THE LOOK, FEEL & SMELL OF CLEANLINESS

By Dr. Thomas R. Murtishaw

Pavement on loading dock areas and employee parking lots (below) cuts down dirt and dust which may contaminate food. Stainless steel equipment like this blender, (right) makes cleaning easier for better sanitation.

In food production, nothing is more important than sanitation. A clean plant is paramount in producing wholesome products.

In fact, checking on sanitation is one of the most important jobs of USDA inspectors who are stationed in every meat and poultry plant selling products across State lines.

Sanitation, though, is everyone's responsibility. Maintaining high standards of sanitation starts when the owner of a meat or poultry plant applies for Federal inspection—which he must have to sell products interstate. But, it's the inspector who checks on how well the plant owner exercises his responsibility in the production of wholesome products.

Sanitation is influenced by much more than the plant attitude or the conscientiousness of the inspector. Design of buildings and equipment must be approved by C&MS before inspection is granted.

Many times plans are reviewed before construction, which solves many future problems and saves untold thousands of dollars for plant owners. Any recommendations on construction are always made with an eye towards sanitation.

Location of the building is important. Plants should not be near refineries, dumps, chemical plants, or paper mills because fumes or ashes may be carried by the wind to contaminate the food.

In reviewing designs, the outside premises are considered, too. Truck loading areas, doors, and windows are all checked for possible sanitation problems. Some improvements like paving roadways and the parking lot can cut down on dirt and dust around the food.

A continuing sanitation program will keep the outside areas clean. Rusty truck bodies, scrap metal and wood, and discarded equipment make ready refuge for vermin. The best extermination program can't be effective when pests are waiting just outside the door.

The interior layout should be designed to move products into areas less subject to contamination. Holding pens must be separated from the slaughtering area, which must be separate from processing rooms.

Throughout the plant, interior materials make up a large part of the general sanitation program. Floors and walls should be impervious to moisture where exposed products are handled. Ceilings must be of a material which cleans easily.

Before each workday begins, the inspector makes sure of the plant's acceptability by checking key spots. Of most importance is the product contact zones—those items which physically touch the food—and tough-to-clean areas like the insides of machinery.

Hand equipment, such as trays and hand trucks, is randomly inspected. Final determination on these is made from the sample. It's a safe bet that if several trays are dirty, they all need cleaning again.

Once the inspector gives the go-ahead to start production, he must set priorities for checking on cleanliness because he must now check the wholesomeness of products. Knives, saws, cutting boards, table tops—anything that touches the product—must be clean. A general rule is, if it "looks, feels, and smells clean" then it's clean.

Remote possibilities of contamination, such as the walls behind large equipment, need a long-range sanitation program. Thorough cleaning when necessary usually accomplishes this. However, plant operators and inspectors must make sure a remote possibility doesn't become severe enough to cause sanitation problems.

Good sanitation and wholesome meat and poultry go hand in hand. USDA recognizes this and so do the vast majority of plant operators. Because of this mutual concern, regular meetings are held with industry to further the goal of a sanitary plant.

It's to everyone's advantage—consumer, industry, and inspector—for sanitation to be high on the list in producing wholesome food. □

The author is Chief, Inspection Standards and Regulations Branch, Standards and Services Division, C&MS, USDA.

YOU WIN WITH IMPORT INSPECTION

In November, 1,500 cases of Brazilian canned corned beef were removed from the United States because of pesticide residues.

In January, more than a million pounds of Dutch hams were seized here for painstaking inspection after one was found to be undercooked. They were then shipped out of the country.

In this era of burgeoning interest in consumer protection, these incidents reveal some of the meticulous work of meat and poultry inspectors in USDA's Consumer and Marketing Service.

Nearly 2 billion pounds of meat and poultry are exported to this country every year. Most is frozen boneless beef and lamb from Australia, New Zealand, Ireland, and Canada. It is used by domestic manufacturers in making table-ready prepared meats, or by large commercial establishments in making hamburgers.

When this meat reaches the consumer, it rarely carries the name of the originating country, since domestic meat and meat from foreign nations may be combined in one product.

The list of nations sending us fresh-frozen or fresh-chilled meat is limited because a country must be ruled free of foot-and-mouth disease, rinderpest, and African swine fever to qualify. These diseases are not a threat to man, but they can decimate animal populations.

Besides Australia, New Zealand, Ireland, and Canada, only Mexico and certain Central American countries have been approved. The rest of the world is on the restricted list!

Meat imports from restricted countries are not completely banned, since cooking and processing destroys the possibility of the outlawed animal diseases. Millions of pounds of fully cooked, canned and processed meat products, in consumer-sized packages and labeled with the name of the exporting country, reach our shores each year from 42 nations.

Only France and Canada are now eligible to export poultry products—which account for only a small part of U.S. imports.

The importation of meat and poultry means that American families can have the wide variety of foods they desire, and that American manufacturers can be assured of an ample supply of meat for processing.

And everyone can be assured that imported meat and poultry products are at least equal to domestic products from the standpoint of wholesomeness. This is where C&MS steps in.

Actually, the importing procedure begins through diplomatic channels, when a nation wishing to export asks the United States to review its inspection regulations. These regulations must meet U.S. domestic requirements.

Next, USDA Meat and Poultry Inspection officials visit the country and view the inspection program in action. It is up to the country's government to certify individual slaughtering and processing plants, but USDA foreign review officers check the certifications.

After the country begins exporting, USDA's 14 foreign review officers continue to make periodic checks on plants and inspection methods.

It is routine procedure for specific plants to be added or dropped from the approved list, depending on whether they meet U.S. requirements.

The exporting countries themselves employ a total of more than 9,000 inspectors to supervise day-to-day operations in meat processing plants.

When a meat shipment arrives in the United States, it is broken down

Steps leading to final inspection of imported meat are shown here, left to right. Boneless beef from Australia is unloaded at dockside in Port Newark, N.J. A statistically selected sample of the shipment is placed in a sealed truck and brought to the inspection point where a USDA inspector verifies the seal. Each sample carton contains a block of frozen meat from which a slice is removed and placed in a plastic bag for thawing. Once thawed, the meat is placed on trays and waits review for defects by USDA inspectors.

into lots and re-inspected as a check on the foreign inspection system. The inspectors are also looking for any contamination that occurred during transport.

This inspection is on a sampling basis. The size of the sample is determined by a statistical formula devised to achieve a high degree of accuracy —about 95 percent.

USDA inspectors can often tell the section, sex, and age of the animal by a glance at the sample. They carefully examine each piece in the sample for bruises, extraneous material, signs of off condition, and other defects.

Chemical tests are made to find such defects as excess moisture or restricted additives. One critical defect or several lesser ones will usually mean rejection of the entire lot.

Canned and processed meats are inspected in a somewhat different manner. Any product containing at least 6 percent meat is considered a meat product. If the cans are meant to be stored at room temperature, USDA inspectors keep samples at 98°F. for 10 days to see if swelling occurs—a sign of some defect.

Some products are refrigerated. As with frozen meat, statistically chosen samples are inspected both visually and chemically.

Of 1.8 billion pounds of foreign meat arriving in the United States in 1970, 21.3 million pounds were found unfit for consumption.

Domestic inspection regulations allow a rejected lot to be returned to the owner for "reconditioning" to bring it to an acceptable level. Not so with imported meat.

A rejected shipment may not be resubmitted at a later time. The shipper usually removes that meat from the U.S., and exports it to another country whose standards are less stringent.

Many rejections are for aesthetic reasons, not because the meat is actually dangerous to eat. Meat that is off condition or poses other dangers would normally be destroyed here.

Another possibility for unsatisfactory but not seriously affected lots is conversion to pet food. The importer must first "decharacterize" the meat, adding dye or some other harmless material that makes it visually obvious to people that the meat is not meant for human consumption.

Inspection results are sent to Washington, where a computer correlates the information daily. Based on past and present performance, foreign plants are rated for tightened, normal, or reduced inspection.

For instance, when a particular plant consistently shows a high level of defects, the computer puts it on tightened inspection. The computer also shows the foreign review officers where to concentrate their attention.

For the government and industry, the meat importation program involves diplomacy and big business. But the most important aspect is, of course, protection. Inspection by the exporting nations, checking by USDA foreign review officers, and re-inspection in this country all work to protect American consumers.

One meat inspector sums it up bluntly—"We keep anything undesirable out."

Even if a homemaker has never heard of the Meat and Poultry Inspection Program, the Consumer and Marketing Service, or the whole U.S. Department of Agriculture—and even if she doesn't know that the salami she serves her family may contain imported meat, it doesn't really matter.

She can be confident that her family is eating a wholesome meal. And that's what it's all about. □

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contents

NOTICE TO SUBSCRIBERS: We are sorry to inform you that this will be the last issue of AGRICULTURAL MARKETING magazine. The periodical is being discontinued.

cover story
Sizzling and saucy barbequed poultry will please many hearty appetites. See page 2.

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